REMARKS

As an initial matter, the undersigned wishes to thank Examiner Riley for discussing this case on 5 June 2003. In particular, basis for the outstanding §102(a) rejection was discussed.

Claims 141, 154, 176, 177 and 201 have been amended. Support for the claim amendments can be found throughout the instant application including the Drawings and claims as filed originally. No new matter has been added.

Claims 141, 176 and 177 have been amended at Applicants' initiative to improve claim clarity. Specifically, claim 141 was amended to replace -N(RN*)- with -N(R^{N*})-, thereby correcting an inadvertent typographical error. Claims 176 and 177 were amended to remove recitation of R^6 and R^7 groups which are not featured in claim 141.

Claims 141, 144-149, 173-177, 180 and 185 stand rejected as being anticipated under 35 USC §102(a) in view of Imanishi et al. (The Sixteenth International Congress of Heterocyclic Chemistry, August 10-15, 1997). Applicant respectfully disagrees with the position taken.

According to the USPTO, Imanishi et al. discloses an oligomer in which X is oxygen, B is a nucleobase and one pair of non-geminal substituents R4* and R2* designates –$(CR^*R^*)_{r+s}$-Y- in which Y is defined as oxygen and r+s is 1. However, the claims as presently pending do not recite such a compound.

For example, claims 1 and 60 recite a pair of non-geminal substitutes R4* and R2* having a biradical structure designated by –$(CR^*R^*)_r$-Y-$(CR^*R^*)_s$- (**"biradical A"**) , and -Y-$(CR^*R^*)_{r+s}$-Y- (**"biradical B"**), for example. Each biradical is discussed below.

Applicant believes **"biradical A"** cannot be –$(CR^*R^*)_{r+s}$-Y- in which Y is oxygen,

because of the following provision in claims 1 and 60: *when the biradical is –$(CR^*R^*)_r$-Y-$(CR^*R^*)_s$-, then Y is –S- or-$N(R^{N*})$-*. That is, Y cannot be oxygen when the claimed nucleoside analogue features biradical A.

It is also believed that "**biradical B**" cannot be –$(CR^*R^*)_{r+s}$-Y- in which Y is oxygen. As recited, biradical B will include two oxygens, two sulfurs, or two -$N(R^{N*})$- groups. See claims 1 and 60. In the event Y is 0 (zero), then the biradical becomes -$(CR^*R^*)_{r+s}$-. This is not the cited –$(CR^*R^*)_{r+s}$-Y- biradical in which Y is oxygen and r+s is 1.

In view thereof, Applicant respectfully submits that there is no basis for rejecting the claims as being anticipated. Reconsideration and withdrawal of the rejection are requested.

Claims 141, 144-149, 154, 156, 159-160, 173-186, and 195-202 stand rejected under 35 USC §112, second paragraph, as being indefinite. Basis for the rejection has been addressed.

In particular, claims 141, 176, and 177 have been amended to remove reference to R^{6*}, and R^{7*}. Claims 154 and 201 have been amended to improve claim clarity.

In view thereof, basis for the §112, second paragraph rejection should be reconsidered and withdrawn.

Early consideration and allowance of the amended claims would be most appreciated.

Directly attached to this submission is a marked up version to show changes made.

Although it is not believed that any fee is needed the consider this submission, the USPTO is hereby authorized to charge deposit account no. **04-1105** if such a fee is deemed necessary.

Respectfully submitted,

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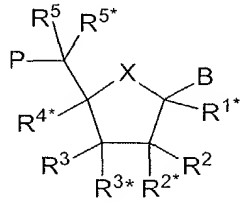
MARKED UP VERSION TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 141, 154, 176, 177, and 201 have been amended as follows:

141. (Amended) An oligomer comprising at least one LNA nucleoside of the general formula I



I

wherein X is selected from –O-;

B is selected from hydrogen, hydroxy, optionally substituted C_{1-4}-alkoxy, optionally substituted C_{1-4}-alkyl, optionally substituted C_{1-4}-acyloxy, nucleobases, DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands;

P designates the radical position for an internucleoside linkage to a succeeding monomer, or a 5'-terminal group, such internucleoside linkage or 5'-terminal group optionally including the substituent R^5;

one of the substituents R^2, R^{2*}, R^3, and R^{3*} is a group P* which designates an internucleoside linkage to a preceding monomer, or a 3'-terminal group;

one pair of non-geminal substituents R^{4*}, and R^{2*}, designating a biradical consisting of 2-5 groups/atoms selected from –(CR*R*)r-Y-(CR*R*)s- , -(CR*R*)r-Y-(CR*R*)s-Y-, -Y-(CR*R*)r+s-Y-, -Y-(CR*R*)r-Y-(CR*R*)s-, -(CR*R*)r+s-, each R* is independently selected

from hydrogen, halogen, hydroxy, mercapto, amino, optionally substituted C1-6-alkoxy, optionally substituted C1-6-alkyl, DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands, Y is –O-, -S-, 0 (zero) or -N(RN)-, and each of r and s is 0-4 with the proviso that the sum r+s is 1-4, and provided that when the biradical is –(CR*R*)r-Y-(CR*R*)s-, then Y is –S- or [-N(RN*)-] -N(R^{N*})-; and

each of the substituents R^{1*}, R^2, R^3, R^5, and R^{5*}, [and R^{6*}, and R^{7*}] which are present and not involved in P, P^* is independently selected from hydrogen, optionally substituted C_{1-12}-alkyl, optionally substituted C_{2-12}-alkenyl, optionally substituted C_{2-12}-alkynyl, hydroxy, C_{1-12}-alkoxy, C_{2-12}-alkenyloxy, carboxy, C_{1-12}-alkoxycarbonyl, C_{1-12}-alkylcarbonyl, formyl, aryl, aryloxy-carbonyl, aryloxy, arylcarbonyl, heteroaryl, heteroaryloxy-carbonyl, heteroaryloxy, heteroarylcarbonyl, amino, mono- and di(C_{1-6}-alkyl)amino, carbamoyl, mono- and di(C_{1-6}-alkyl)-amino-carbonyl, amino-C_{1-6}-alkyl-aminocarbonyl, mono- and di(C_{1-6}-alkyl)amino-C_{1-6}-alkyl-aminocarbonyl, C_{1-6}-alkyl-carbonylamino, carbamido, C_{1-6}-alkanoyloxy, sulphono, C_{1-6}-alkylsulphonyloxy, nitro, azido, sulphanyl, C_{1-6}-alkylthio, halogen, DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands, where aryl and heteroaryl may be optionally substituted;

[(i)] and basic salts and acid addition salts thereof.

154. (Amended) An oligomer of claim [151] 141 wherein R^{3*} designates P^*.

176. (Amended) An oligomer of claim 141 wherein each of the substituents R^{1*}, R^2, R^3, R^{3*}, R^5, and R^{5*}, [R^6, R^{6*},R^7, and R^{7*}]of the one or more LNA nucleosides, which are present and not involved in P, P^*, is independently selected from hydrogen, optionally substituted C_{1-6}-alkyl, optionally substituted C_{2-6}-alkenyl, hydroxy, C_{1-6}-alkoxy, C_{2-6}-alkenyloxy, carboxy, C_{1-6}-alkoxycarbonyl, C_{1-6}-alkylcarbonyl, formyl, amino, mono- and di(C_{1-6}-alkyl)amino, carbamoyl,

mono- and di(C_{1-6}-alkyl)-amino-carbonyl, C_{1-6}-alkyl-carbonylamino, carbamido, azido, C_{1-6}-alkanoyloxy, sulphono, sulphanyl, C_{1-6}-alkylthio, DNA intercalators, photochemically active groups, thermochemically active groups, chelating groups, reporter groups, and ligands, and halogen, where two geminal substituents together may designate oxo, and where R^{N*}, when present and not involved in a biradical, is selected from hydrogen and C_{1-4}-alkyl.

177. (Amended) An oligomer of claim 141 wherein each of the substituents R^{1*}, R^2, R^3, R^{3*}, R^5, and R^{5*}, [R^6, R^{6*}, R^7, and R^{7*}] of the LNA(s), which are present and not involved in P, P^* designate hydrogen.

201. (Amended) A diagnostic or analysis kit comprising a reaction body and one or more oligonucleotides of claim [157] 156.

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